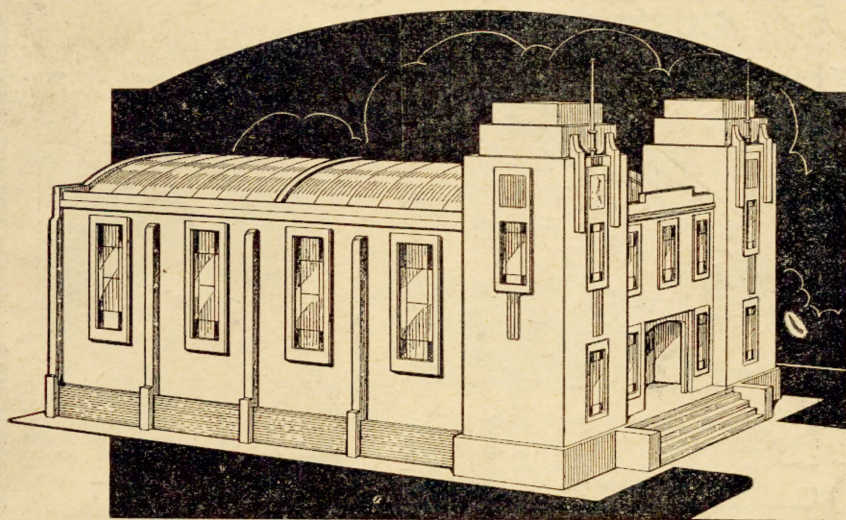


Hobbies

WEEKLY

A MODEL RAILWAY TERMINUS STATION

.....



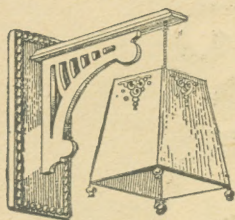
For O Gauge
In Wood
Free Design

March 19th, 1938

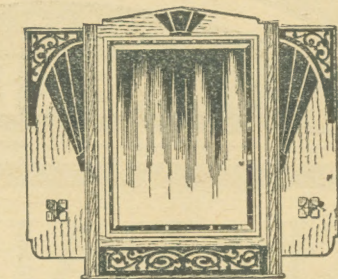
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Vol. 85. No. 2213

**THE FRETWORKER'S AND
HOME CRAFTSMAN'S JOURNAL**

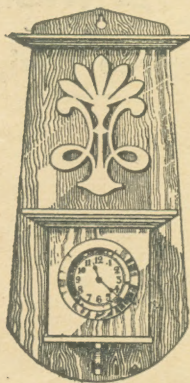


Design No. 1973B gives patterns for making two brackets. Each projects about 6ins. No shades are supplied. A parcel of beech, with beading for decoration (including design). **Sale Price 1/-. Postage 6d.** Usual price 1/8.

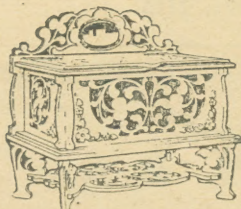


This attractive Overmantel is 32ins. wide by 28ins. high. It can be made from Design No. 184 special with parcel of Oak and Padouk and handsome bevelled mirror. **Sale Price 23/- carriage forward.** Usual price 32/6.

Balcony Bracket 12ins. high. Built from Design No. 1869 with Whitewood, turned spindles, 5in. convex mirror and bracket eyes for hanging. **Sale Price 3/3.** Postage 6d. Usual price 4/7.



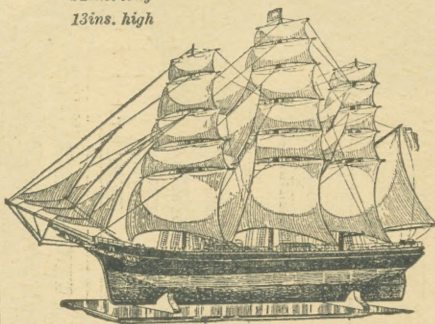
No. 1897. Hanging Clock. 12ins. high. A complete parcel of design, wood, moulding and reliable 30-hour movement. **Sale Price 4/9.** Postage 6d. Usual Price 6/10.



Jewel Casket. 8ins. long. Design No. 2143 with Whitewood, bevelled oval mirror, metal corners and hinges. **Sale Price 2/3.** Postage 6d. Usual price 3/2.

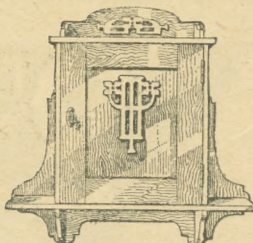
CUTTY SARK

21ins. long
13ins. high

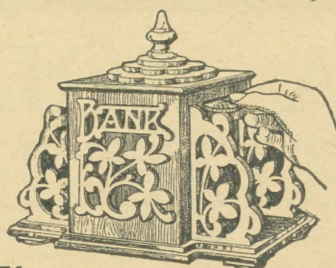


This fine model is built from Design No. 2186, with instructions, Satin Walnut, deal, plywood, round rod, screw eyes, rigging cord and special waxed paper for sails. **Sale Price 3/-.** Postage 6d. Usual price 4/2.

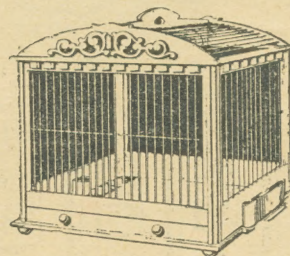
**Sale
ends
April
2nd.**



This decidedly useful hanging cabinet is 14ins. wide overall and is made from Design No. 1895, with Oak boards, ready-made door, hinges, catch, and hangers. **Sale Price 4/3.** Postage 6d. Usual price 6/-

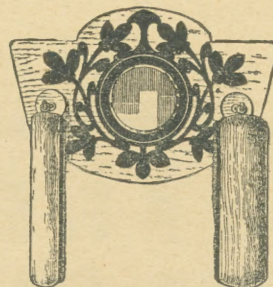


Mystery Money Box (Design No. 2134). The lid has a secret locking device. Size 8ins. long overall. Design, with Mahogany and turnings, etc. **Sale Price 1/6.** Postage 6d. Usual price 2/4.



Bird Cage, size 14ins. by 8ins., built from Design No. 1959, with parcel of wood, moulding, feet, etc. and hard-drawn brass wire and feeding glasses. **Sale Price 5/9.** Postage 6d. Usual price 8/4.

Brush Rack with mirror. Size 10ins. wide. Design No. 1974 with Oak and Padouk, bevelled mirror, hat and coat brushes and two wall hangers. **Sale Price 3/9.** Postage 6d. Usual price 5/4.

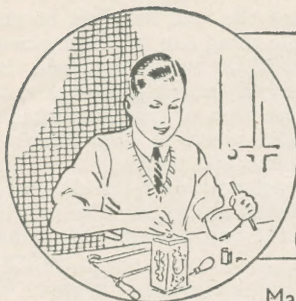


HOBBIES SALE

Bargains in Things to Make

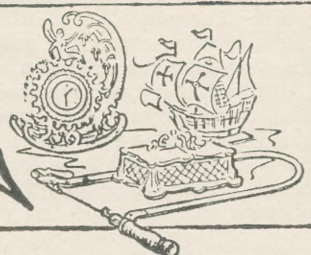
Prices drastically reduced. Your big chance to save money. But you must hurry!

Sale Ends April 2nd.
Hobbies Ltd., Dereham, Norfolk.



Hobbies

WEEKLY



March 19th. 1938

Vol. 85. No. 2213

MODEL RAILWAY STATION

THE design this week is for making an excellent model of a modern railway terminus suitable for use with any Gauge O railways. As can be seen by the back view at Fig. 1 there is an open end into which the trains can be run with platform on each side, the correct height of the ordinary rolling stock.

A complete parcel of wood is supplied for building the parts, of which the main walls are in ordinary wood, and the platform pieces in plywood.

Before commencing work, study the design sheet as well as the drawings and instructions here. The station itself is built in two complete portions. There is the front with its two steps and entrance, then the main side walls with the domed roof. By the way, this roof is transparent as in ordinary stations, and to obtain this we supply a special pliable unbreakable material like glass, which can be bent to shape and fixed in position with glue and nails.

In Two Portions

The whole of the front portion is built independently from the station portion itself, and the two stood up close to each other when in use. Notice that some of the parts on the sheet are to scale only, and the dimension given should be marked out direct on to the wood. Notice, too, the details of the adjoining pieces indicated by dotted lines, and prick these out by making a hole in the wood so you can see where they will come. Where the design patterns also are broken, they must be extended.

Let us note the construction of the front portion of the station first. The whole of it is built on a raised platform to which are added the two end towers. This front platform is shown to scale inside

the pattern of the platform pieces, and can be actually cut from the waste portion of that part. You will thus require a piece of plywood 10½ ins. wide and 14½ ins. long.

Main Platforms

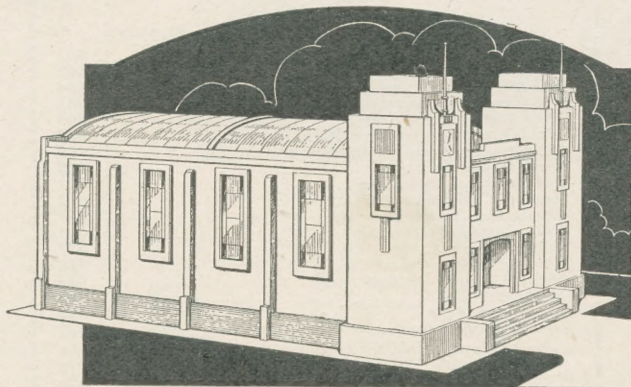
Mark out the actual main platform which consists of three sides of a frame, then from the centre portion which is cut we mark out the front platform. The edging pieces for both these portions—the main and the front platform—are shown in table form, and are cut from 3/16 in. wood ¾ in. wide.

They are glued under the platforms concerned to form the walls and stiffening blocks should be put up inside in the angles to provide a strong joint.

The Towers

The towers are built up as can be seen from the broken view at Fig. 2 with the front and back walls put between the two side ones. These walls, of course, can have the overlays glued on them first, and the windows are also made of the rhodoid transparent material. Notice the overlay is glued on the front, the aperture in it being larger than the hole in the wall itself. This is opposite from the usual practice, but in this case the transparent rhodoid is cut the size of the overlay opening, then glued in place on the main wall and not behind it.

To the top of the towers is fitted a flat roof, and above this is raised the narrow box form of the pieces B and C. An upper roof is added to this, then finally ½ in. thick piece glued on. Additional fancy pieces are glued to the front shown as part A on the towers. They are lodged into the corner. Flagstaff and ornamentation



Suitable for a Gauge O System

shown in the finished drawing can be added quite easily. The panels are painted above the windows on the overlays, and the windows themselves are lined up with Indian ink on a fine pen.

Between the towers comes the main entrance. This is cut from 3/16in. wood, and behind it is glued the station roof where shown by the dotted lines, and then the false front consisting of three pieces. These are called the top to the inner side of main entrance, and the two side pieces them-

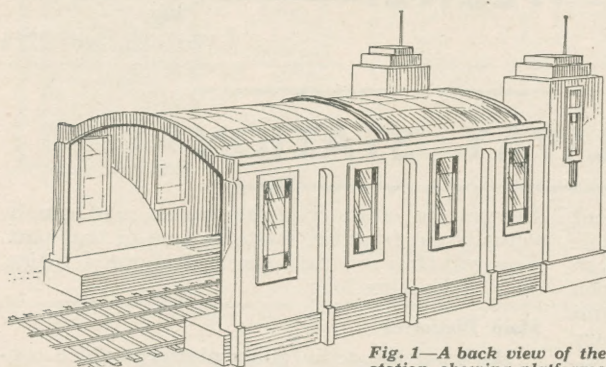


Fig. 1—A back view of the station, showing platforms

selves. The back view at Fig. 3, shows these clearly.

The roof of the station is fitted in line with the back of the tower, so that the main front will be set back slightly on the platform. The steps are added to the front as seen in the picture.

The strips cut are glued above each other, getting gradually nearer to the top, and with the back edge of each flush. An upright end of thicker wood is glued on, then the whole thing is glued below the station entrance.

The Glass Roof

Now we can turn our attention to the domed portion of the station which is built entirely independently. Get out the main platform piece as previously detailed, and here again add the various strips on the underside to form the upright walls, and to lift the platform the necessary height.

These are lettered C, D and E, and should be provided with blocking pieces behind to stiffen up. Two upright walls are held apart by three roof spans. The position of the walls, in turn, is ruled by the buttresses on their outer edge.

Cut out and fix the overlay windows and put in the transparent rhodoid then glue on the buttresses at the dimensions given on the scale drawing, so that the lower end projects below the wall. The step piece

in these buttresses fixes the wall in place to the platform, and the whole thing can be there glued.

Test up the position of the walls, then add the upright pillars and the end truss at the back end. Notice before fixing the arch of the truss that a narrower piece of 3/16in. wood to form the roof support is glued inside this end portion.

This is to take the roofing material itself, and a detail of its fixing is shown at Fig. 4. The middle truss and the one for the end nearest the station

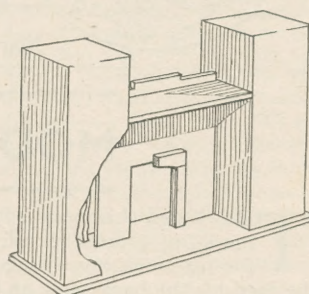


Fig. 3—Back view of entrance and towers

Fig. 2 (left) A cut-away of the towers to show construction

front, are both alike in shape, and actually are glued between the sides.

The middle truss has to have a supporting rib glued on it each side, whereas the end one only has the support rib on the inside.

MATERIALS REQUIRED

Fretwood.—For making this railway station we supply satin walnut and plywood, 5/3, post free 6/-

Fittings.—Transparent Rhodoid (unbreakable glass), 3 pieces, 13 by 7ins. wanted, 1/- per piece. Postage 4d.

A complete parcel, wood and rhodoid, 8/6, post paid.

These support portions are, of course, glued with their upper edge a little below the main truss portion, to allow the roof material to lie flat when glued on. This end which comes behind the front should also have a piece of rhodoid fixed over the

arch so that when you look at the model from the front you do not see under roof, but look through glass front.

The transparent material of the roof is cut into two sheets 10½ins. by 6½ins., but before actually doing this, test the dimensions out with the actual model.

To provide a ridge upon which to fix it, a strip is glued to the sides between the roof trusses, and the upper (Continued on page 614)

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Correspondence should be addressed to: The Editor, Hobbies Weekly, Dereham, Norfolk, and a stamp enclosed with the Reply Coupon from Cover iii if a reply is required. Particulars of Subscription rates, Publishing, Advertising, etc., are on cover iii.

A NOVEL TOY CART

"PETER the Pup," though not a Silly Symphony character, is sure to please children just as much as Walt Disney's famous Mickey Mouse or Donald Duck. Peter was inspired by a rather scraggy, wire-haired fox terrier, and with a touch of exaggeration and a patch on his side, he will definitely bring a smile on chubby faces.

The toy measures 22ins. long by 13ins. wide by about 16ins. high. The parts are cut easily from deal, which, of course, is soft and inexpensive, whilst the wheels can be obtained from Hobbies Ltd., the large pair (No. 604) costing 10½d., with the smaller pair (No. 604) costing 7d., postage being extra. Four screws and 8 washers cost 3d.

Cutting Out Peter

The statuette of the dog could be cut out first. As usual, 2in. squares are ruled on a piece of 7/8in. thick stuff and then followed faithfully (in pencil) as outlined at Fig. 1. The only "cut-out" is between the hind and front legs, the other features being painted on with suitable coloured enamels.

A keyhole saw is used in cutting the shape. Note that the bottom tenon is 3½ins. long by 1½in. deep to be in conjunction with the thickness of the chassis board and its mortise. If desired, the tenon and mortise could be dispensed with and the statuette affixed in place entirely with flathead iron screws. Apart from the tenon, you see, two or three such screws were wanted, so you have the alternative of using nothing else but screws according to your own views.

Having cut out the statuette, rasp and spoke-shave the edges smooth, then glasspaper and set it aside meanwhile. The cart sides are shaped as shown by the rear elevation at Fig. 2. These are simply glued and nailed (with 1½in. oval nails) to end pieces 8ins. long by 6ins. wide and 3ins. wide respectively (see top view at Fig. 3).

The nail heads must be well punched and then filled in with plastic wood, wax or putty prior to screwing or nailing the work to the chassis board which could be cut out at this juncture.

In affixing the cart sides to the chassis, it

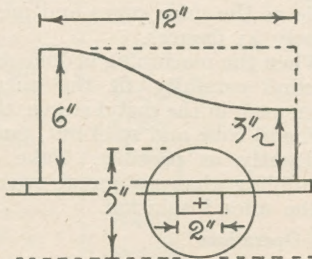
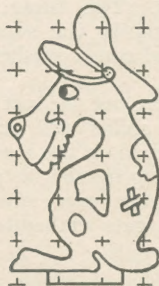
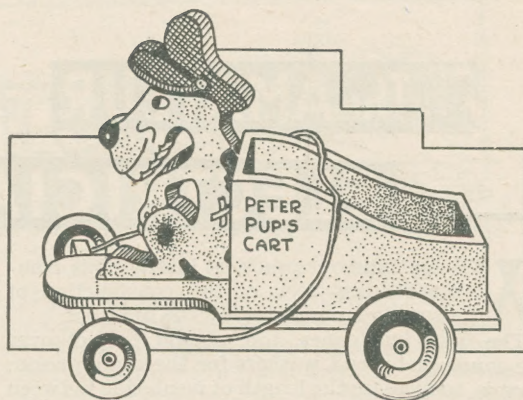


Fig. 1—Outline of dog in 2in. squares

Fig. 2—Size and shape of cart sides



should be remembered that the back of the dog must rest against the 6in. wide end piece for screwing purposes. This is to strengthen the statuette and is mentioned in case you have decided to use the tenon and mortise method of affixing. One screw driven into the statuette would serve.

Before attaching the dog, however, pivot the front axle in place with a flathead screw driven into same from the top of chassis. As the dog will be glued on top, countersink the wood well so the screw head is below the surface. The rear axle is attached with flathead (or roundhead) screws driven in from beneath the chassis. Three screws are sufficient.

Colouring the Work

Having drilled two cord holes through the front axles near the ends, the work can be coloured. The cart chassis, axles and sides could be painted bright green, with the inside bright orange. The dog is first painted white all over, then touched up with black and tan colours. The cap could be green, with the patch orange.

When the enamel has thoroughly dried, glue and screw the dog in position, then affix the wheels, each having a washer on the inside and outside.

MATERIALS REQUIRED

- 1 statuette piece, 14ins. by 9ins. by 7/8in. thick.
- 2 cart sides, 12ins. by 6ins. by 1/2in. thick.
- 1 cart end, 8ins. by 6ins. by 1/2in. thick.
- 1 cart end, 8ins. by 3ins. by 1/2in. thick.
- 1 rear axle, 11ins. by 2ins. by 7/8in. thick.
- 1 front axle, 10ins. by 1 1/2ins. by 1/2in. thick.
- 1 chassis board, 22ins. by 10ins. by 1/2in. thick.
- 2 wooden wheels (No. 604), 5ins. diam.
- 2 wooden wheels (No. 604), 4ins. diam. (with 4 screws and 8 washers).

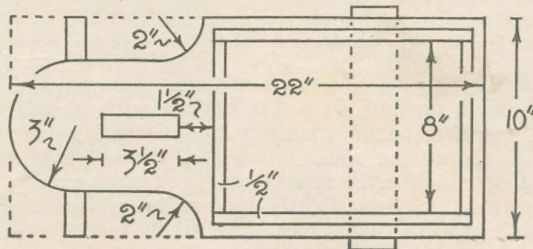


Fig. 3—Plan and dimensions of chassis board

The AMATEUR ELECTRICIAN

SMALL COMMUTATOR CONSTRUCTION (Concluded)

WE continue our practical instructions, commenced last week, on the construction of a small commutator by the amateur.

The mica end cones, too, should project over the coned metal end washers for the same reason. That is, to increase the length of insulation between "live" metal and the framework.

The process of building up a small commutator on these lines is generally carried out in the following order, and as the work contains numerous pitfalls for the inexperienced worker a few hints may be useful.

The Sleeve

The metal sleeve of mild steel is first turned up, but left $\frac{1}{4}$ in. longer overall than the finished size. Turn the taper or undercut in the head of the sleeve to an angle of 45 degrees, and cut a fine thread on the opposite end of the sleeve, about 26 T.P.I. being best for small diameters (brass gas thread).

The loose steel clamping and steel nut are next prepared, the sleeve mounting being then complete. It is best to obtain the coned mica end rings and mica sleeve for the inside of the segments ready made by a firm specialising in mica working, as special tools and processes are required to ensure a satisfactory article.

The thickness of the mica walls in the end cones and centre collar should be 0.060 inches.

Machining the Segments

It is in dealing with the segments that the greatest care is required. First cut off a sufficient number of pieces from the hard-drawn copper strip allowing a sufficient excess in length for

Insert the mica separators one by one between the copper segments, forcing them apart momentarily for that purpose against the tension of the rubber band, and see that they completely fill the spaces.

The next stage is to compress tightly the whole structure as solidly as possible before turning the recesses at the ends. Unless this is well carried out the commutator will assuredly get out of shape when in use and give subsequent trouble through sparking at the brushes.

The best and simplest way to consolidate the commutator assembly is to force the whole into a steel ring the centre of which has been bored slightly smaller than the overall diameter of the commutator. A short taper or "lead" is given to the ring to assist entry (Fig. 6).

Close the Assembly Tight

With a powerful vice or under an arbor press the assembly is then closed up as far as it will admit, and is then in a suitable condition for boring and recessing, the outer steel ring being convenient for chucking purposes.

Bore the interior so the mica collar is a push fit. Remove this collar and then mount the commutator on a steel mandrel, when the rest of the work can be done between the lathe centres.

This is better than first recessing one end in the chuck and then reversing, as there is not the same risk of getting the two recesses eccentric with one another. Turning should be carried out at a high speed with very light cuts and with a very sharp tool having plenty of cutting clearance and an oilstone finish to its point.

Unless it cuts perfectly freely, copper fins and rags will be dragged across the mica from one segment to another giving endless trouble later with shortcircuits.

The Angle Required

Use no lubricant, and polish with fine glasspaper, but on no account use emery. The tapered recesses at the ends must be exactly the same angle as the mica cones and metal coned washer, namely 45 degrees.

When the machining is done drive out the metal mandrel carefully, fit the mica collar and end cones push in the metal sleeve, thread on the loose steel end cone and steel nut, pulling up the latter as tightly as possible. Take every care when assembling that no metal swarf gets embedded in the mica insulation.

Last Operations

The last process is to make the commutator quite hot over a gas ring, and once more try

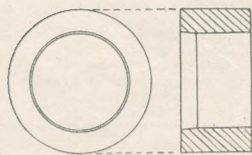


Fig. 6—Jig for assembling commutator

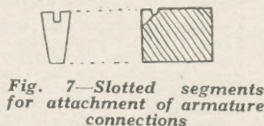


Fig. 7—Slotted segments for attachment of armature connections



Fig. 8—Recessed mica under the brush track

finishing up to size, and arrange the group of segments upright on a flat surface with a stout rubber ring round them to hold them together.

Next cut the same number of pieces of best amber mica for the separators, each piece exactly 0.03 in. thick and slightly longer and wider than the segments themselves. So, when turned and finished to size, no small gaps will be left between the segments either at the inside or at the ends.

whether the clamp nut on the sleeve can be pulled up any tighter.

If not, force the outer steel ring off in the opposite direction to the way it went on and while the commutator is still hot, as it is an easier fit then than when cold. This will leave the face of the commutator exposed ready for truing up the surface, which is then finished first with a sharp V-pointed lathe tool, then with a dead smooth file, and lastly with No. F glasspaper.

It is usual to turn a shallow half-wound recess on the commutator face at the back end as shown in Fig. 5 and to make diagonal sawcuts in the centre of each segment to receive the armature connections.

The width of the slots here should correspond to the gauge of wire with which the armature is wound, and slotting is best left until the coils are in position so soldering can be done while the sawcuts are clean and untarnished. Otherwise it is more difficult to make a sound soldered joint. Slotted ends to the segments are shown enlarged in Fig. 7.

Sometimes the mica separators between the segments are undercut below the diameter of the commutator surface where the brush track comes.

The object in this is to prevent sparking arising after the commutator has been in use for some time, through a defect known as "high mica." It is not easy to select a grade of mica that wears down at exactly the same rate as the copper segments themselves under the brushes and if some separators are harder than others these will tend to project after a while and trip the brush, lifting it momentarily off the copper bars as it comes underneath.

To prevent this it is customary to recess or undercut the micas slightly below the surface of the copper, by about the same depth as their own thickness. This requires care, as any loose edges of mica left standing up will cause sparking.

A high speed slotting saw is the best way to remove the mica, slightly wider than the thickness of the mica itself. An enlarged view of a few segments with the mica recessed is shown in Fig. 8.

A STAMP CROSSWORD!

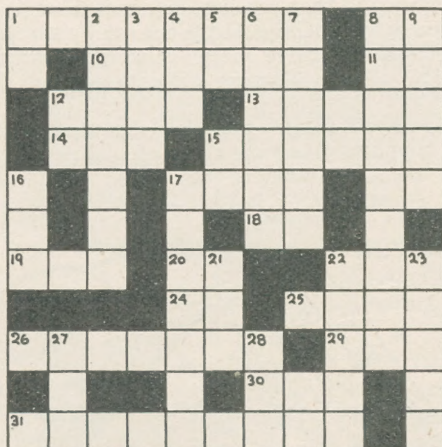
An interesting "Square" anyone can solve.



As a sedentary worker must exercise his body by doing a spot of gardening, etc., so a manual worker must give his muscles a rest and do a bit of thinking, such as over a Crossword Puzzle.

The Stamp puzzle provided herewith is another of our series of hobby puzzles which will appear, each covering the other hobbies of Photography, Chemistry, Fretwork, etc. No prizes will be offered for correct solutions; the puzzles are merely for amusement.

The completed square will be published next week for checking purpose. So, test your knowledge. You may not be interested in Stamp Collecting, but that should not keep you from attempting the crossword. There are no alternatives to worry you. Now, what about it?



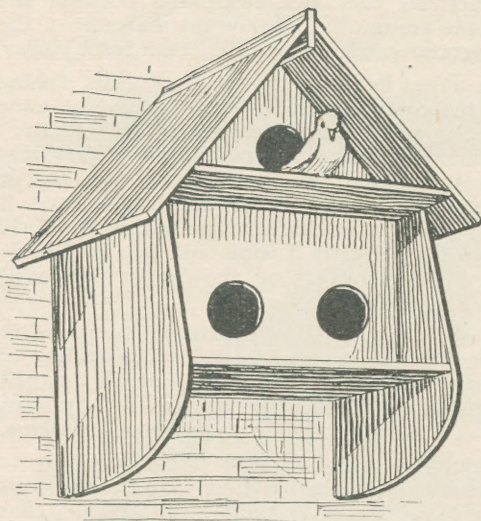
CLUES DOWN

1. A child's thanks.
2. Many a pleasant one is spent over your stamp collection.
3. New name of Irish Free State.
4. Most species of animals are seen at this place.
5. English Lacrosse (abbr.).
6. The enjoyment of the hobby is the collector's.....
7. Most of them are removed from mailed envelopes.
8. To possess an identical stamp.
9. Donkeys.
12. The opposite of 'yes.'
15. Stamp Album (abbr.).
16. Used in adhering stamps.
17. Many collectors like to do this with specimens they don't need.
21. It is the hope of every philatelist to find a stamp that will fetch plenty of this if auctioned.
22. A long piece of wood.
23. Stamps come from nearly every part of it.
27. A girl's name.
28. A place where there is a mineral spring.

CLUES ACROSS

1. An implement no philatelist should be without.
8. Short for "father."
10. A colour often seen on stamps.
11. United States (abbr.).
12. Man who fiddled while Rome burned.
13. Beware! Human ones will sting you.
14. A single stamp.
15. A specimen article.
17. An Irish emblem.
18. Dramatic Society (abbr.).
19. A foolish fellow.
20. Religious Tract (abbr.).
22. You often see these marks on your stamps!
24. Means every two.
25. Highest male voice in a choir.
26. Surname of well-known firm selling philatelic supplies.
29. First three letters of "aeroplane."
30. Is used in writing a signature.
31. This interests every collector.

Look out for another "hobby" Crossword shortly



THIS cote is suitable for almost any position, and can be fixed to a brick or stone wall quite easily and at any convenient height from the ground.

The size of the cote must necessarily be left to the worker himself, but that shown here answers quite well.

The overall width from eaves to eaves is 30ins. and the height 37ins. Each of the ends A will be made from three pieces of $\frac{1}{2}$ in. grooved and tongued matchboarding 24ins. long. They will be knocked together and held by the two battens (B and F) strongly nailed on.

On one side of the piece draw out the shape in Fig. 1, and cut round with the fretsaw. A second side which will be similarly cut and afterwards smoothed up. The top edges of both sides will have to be chamfered off with the plane to take the slopes of the roofs which fit down on top.

Floor and Front

The floor (C) is made from matching as before, and nailed to the battens B, further strengthening strips being put underneath the floor if desired. The front (D) may be a solid single piece measuring 25ins. by 12ins. by $\frac{1}{2}$ in. or made up from $\frac{1}{2}$ in. matchboarding held together by small battens at the back or interior.

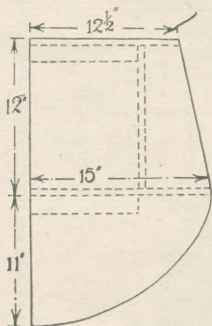


Fig. 1—Dimensions and shape of side

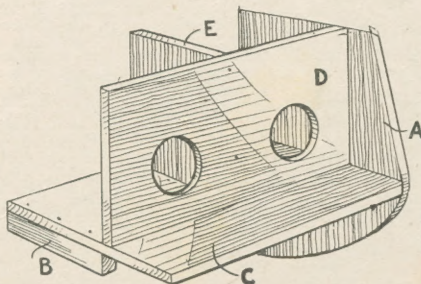


Fig. 2—General construction of house portion

WALL TYPE PIGEON COTE

Set up this upright piece 6ins. from the front edge of the floor and put in some screws as fastening. The position of this is seen in Fig. 2 and again in Fig. 1 resting against the front of batten F. The two holes (4ins. in diameter) are cut with a coarse fretsaw, the edges being rounded off with glasspaper.

Partition E is a plain piece nailed or screwed centrally with the floor and through the front upright D.

The Gable

The upper, or gable part of the cote is constructed as shown in Fig. 3. The floor (G) is 25ins. long by 15ins. wide of $\frac{1}{2}$ in. matching, nailed down to the battens F. The triangular front (H) is of matching, 12ins. high to the point in the middle and 25ins. long.

CUTTING LIST

- | | | | |
|----|--|---|---------------------------|
| A. | Two sides made from six pieces $\frac{1}{2}$ in. matching. | 24ins. long. | |
| B. | Two pieces. | 9 by $1\frac{1}{2}$ by $\frac{1}{2}$ in. | |
| C. | One piece. | 25 by 15 by $\frac{1}{2}$ in. | Or three pieces matching. |
| D. | One piece. | 25 by 12 by $\frac{1}{2}$ in. | Or three pieces matching. |
| E. | One piece. | 12 by 9 by $\frac{1}{2}$ in. | |
| F. | Two pieces. | 9 by $1\frac{1}{2}$ by $\frac{1}{2}$ in. | |
| G. | One piece. | 25 by 15 by $\frac{1}{2}$ in. | Or three pieces matching. |
| H. | One piece. | 25 by 12 by $\frac{1}{2}$ in. | Or three pieces matching. |
| I. | One piece. | 17 by 2 by $\frac{1}{2}$ in. | |
| J. | Four pieces. | 17 by $1\frac{1}{2}$ by $\frac{1}{2}$ in. | |
| K. | One piece. | 21 by $1\frac{1}{2}$ by $\frac{1}{2}$ in. | Or six pieces matching. |

No backing is allowed for.

Put the pieces together by means of the grooves and tongues and then set out the exact triangle in pencil ready for cutting. At the apex cut a slot $\frac{1}{2}$ in. wide to hold the ridge piece (I) which measures 17 $\frac{1}{2}$ ins. by 2 $\frac{1}{2}$ ins. Measure off carefully for the ridge.

Then cut off from 1 $\frac{1}{2}$ ins. by 1in. stuff, four sloping supports J to take the roof. These pieces

(Continued on page 608)

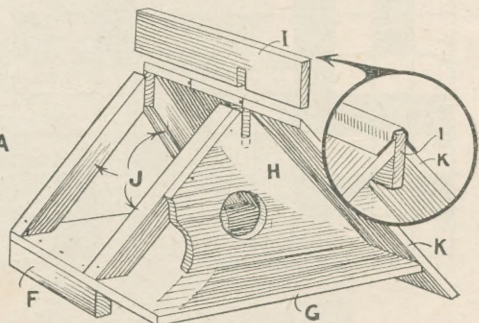
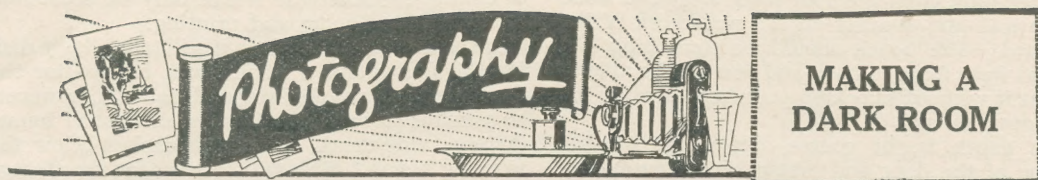


Fig. 3—How roof and upper portion is built



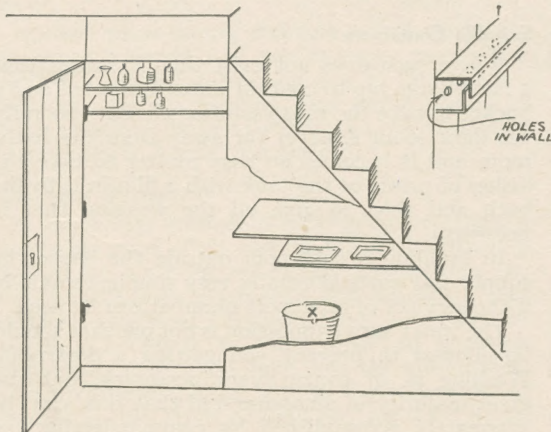
MAKING A DARK ROOM

DURING the next few months it is our intention to give a series of practical articles which will enable many of our readers to become much more expert and interested in this hobby. Quite a number think of using their cameras only when going on holidays and then simply for the purpose of getting snapshots of their party on the beach, in camp or at games, etc.

They seem to lose sight of the fact that it is possible for them to make pictures to give them pleasure for all time; that they can take subjects to be used by the press bringing them some pocket money. Or that every year there are many competitions arranged for all classes of camera work and many of them have quite big money prizes offered which even a beginner might be successful in winning.

From Small Beginnings

We would remind the younger members among our readers that many thousands of men and women now earning good livings from one or other of the branches of photography, first got a liking



The lay-out of an under-stairs dark room with details of ventilation

for and an interest in the art simply from the use of a cheap camera. They became keen, and made a point of doing as much as they could themselves of the work—such as developing and printing and, having mastered it, they joined classes and then found employment, thus turning their hobby into a profession.

How to become an Expert

There is no doubt that sooner or later a keen amateur will require a darkroom. This is perhaps not so necessary in these days of tanks as it was when only plates were used and all developing was done in dishes. But there are some processes

which cannot be done without such a place, or at any rate a room where all daylight can be excluded.

This, however, takes time with an ordinary dining or living room and perhaps means a certain amount of inconvenience to others of the family. It follows, therefore, that it is better to have some place where you can go at any time and in a few seconds get busy on the work you wish to do.

Cupboard or Attic

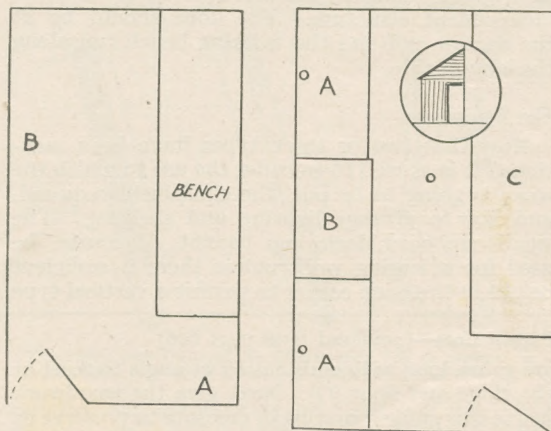
For developing and simple contact printing the darkroom need not be a big place. A cupboard under the stairs or in a loft will serve, always provided that there is room for you to move and to breathe.

It is sometimes possible to build in a corner of a lumber room or attic a useful compartment that will give you all you require so long as you are near a water supply. A disused garage or a big shed in the garden make excellent places if weather-proof and if it is possible to warm them during the winter months.

This latter point is a very important one, for it must be remembered that good work is practically impossible if the temperature of the solutions is too low.

The Cupboard Darkroom

Those of you who are living in houses where there is a cupboard under the stairs will find this



Plan of attic dark room with bench, space for enlarging easel (A) and shelf along F wall (B)

has dimensions round about 2ft. 6ins. to 3ft. across to the wall from the door opening. The highest part of the interior is possibly six to eight feet, sloping down to the bottom tread of the staircase. Clear everything out of the cupboard and you will find that you can make a very useful bench without much expense.

At 3ft. 6ins. from the floor place a fillet of wood on the wall and another on the woodwork of the cupboard. The bench should be something like two feet from front to back and you will be able to work at it without knocking your head against the protruding stairs.

This depth is, of course, dependent on the position of the door and height of the cupboard, but if it is under a long flight of stairs, without turning, there is usually plenty of space, the highest part of the room will be at your back. So you can thus have the maximum space for moving and also for a shelf or two above the head. The illustration will explain the actual position quite clearly.

The Attic Darkroom

If constructed in the space leading to a dormer window and with a sloping ceiling, it can be arranged in the same way as the staircase cupboard. But if it happens to be a long narrow space built out from a roof room, say about 9 or 10 feet long by 4 wide, then it is possible to make a splendid darkroom that will give you all the accommodation you require.

It merely means erecting a door at the entrance and making a shutter to the window. The size of the bench should be about 6 or 7 feet along the side wall.

In the more modern houses the cupboards are usually very shallow ones and therefore unfortunately of very little use to the amateur photographer. If therefore he is not permitted to use the bathroom he must have recourse to the garden. This means building and if there is the space for it then he should aim for one that would give comfort and plenty of room in which to move about. Not less than eight by six feet and seven in height is required, whether it is a lean-to or an independent structure. The door should be at the narrow end and the working bench run along the longest side.

The Equipment

Now that two or three types have been mentioned it is as well to consider the use to which the room is going to be put, the equipment required, and how to arrange lighting and shelving. The small cupboard darkroom cannot, of course, be used for enlarging work unless there is sufficient height in the back corner to permit a vertical type

of enlarger. Otherwise it can only be accommodated for developing and printing.

If the bench is 2 feet deep it will take a large dish for the fixing and a smaller one or two for the developer and washing water. It should, however, be possible to make another bench or shelf immediately underneath, about 10 inches below the working bench. This will be used for the storage of various things which find their way into every workroom.

On the wall side of the room, have a couple of shelves as high as you can above the head and about four inches wide. These should take all the bottles you are likely to want.

Do not have too many things lying about as they all accumulate dust and this is prohibited in the best darkrooms.

Water Supplies

The question of a water supply for a darkroom is one which can only be answered when it has been decided where and how it is to be constructed. If the darkroom is under the stairs it is obvious that a supply of running water is almost, if not quite, impossible and the same applies to one constructed in a room below the surface of the ground, such as a cellar, unless there is the means of conveying the waste to a drain which happens to be below the floor level of the chamber.

In some lofts it is, however, possible to have a sink and a supply when there happens to be a service cistern built in the roof.

Suitable Containers

Where such does not exist then it means that a fairly large jug to contain water is wanted and a bucket to take the waste solutions. But generally the dark room is never far away from the bathroom and it becomes an easy matter to take the dishes of prints or the tank with a film in it to the bath and then to give all the washing that is necessary.

In building a darkroom outside the house the supply and waste is usually very simple, especially if the services of an expert plumber can be used.

The water supply question is not one that should be allowed to prevent you getting a darkroom. Washing is, of course, very necessary, but the great majority of amateurs find that this can be adequately accomplished by commandeering the bathroom or kitchen sink.

(To be Continued)

Pigeon Cote—(continued from page 606)

are 17ins. long with ends cut to an angle to meet at the ridge and floor (G). Next give the woodwork inside this gable a coating of creosote to preserve it.

The roof can be formed in two ways. It can be made from $\frac{1}{2}$ in. matchboarding with its lengths running from ridge to eaves (as shown here), or made up in shorter length running crosswise across the sloping supports and nailed to them after knocking the grooved and tongued pieces together.

The latter method is perhaps the better of the two, especially if the roof slopes are going to be

covered with felt or ruberoid.

All the roof timbering should be creosoted if not painted, and the ridge afterwards covered with a piece of felt or material as shown in the enlarged detail in Fig. 3.

Pigeon cotes of this kind are generally made without backs, which facilitates cleaning. If a back is desired this may be of stout plywood well painted and then screwed over the whole back.

Two stout iron eyes should be attached to the back of the upper floor, and these should engage two hooks plugged or cemented in the wall.

A WIRELESS REMINDER

HOW many times, we wonder, have our readers had the annoying experience of carefully choosing some tit-bit in the radio programme, and then forgetting to turn on to it until it was half over?

Here, then, is a novel little toy that will prevent that happening again! It is made to stand on, or near, the radio itself, and is in the shape of a miniature receiving set, with three little dials that can be set to indicate the station and the time at which the favourite item is to be heard.

Since the amount of wood required is not great, a nice variety like mahogany or light oak can be used, of a thickness of $\frac{1}{4}$ in. for the bodywork and dials, and $\frac{1}{8}$ in. for the shaped sides.

Alternatively, of course, ordinary three-ply can be used for economy; or certainly if a coloured Enamel finish is chosen in preference to a stain and polish.

The Cabinet

Make a start with the front and back. Fig. 2 gives the necessary guide for marking these out. Then cut the bottom, as shown at Fig. 3, and the piece for the side (from the thinner wood), as shown at Fig. 4. Ten stay pieces will also be required, $\frac{3}{16}$ in. long. These can be cut from any odd pieces of wood, and are just for nailing the shaped sides to.

The Three Discs

For the dials, cut three circles, as shown at Fig. 5. Each of these has a hole in its centre, $\frac{1}{4}$ in. diameter, for the pieces of dowelling that act as spindles. The front and back are also cut to accommodate these spindles which are just pieces

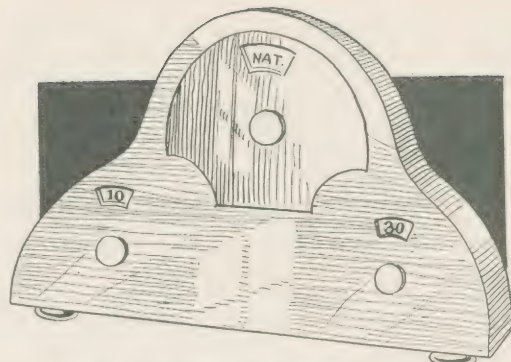


Fig. 1—The completed "Memory Tickler"

of $\frac{1}{4}$ in. dowelling $3\frac{3}{4}$ ins. long (see Fig. 8), and to which the discs and the knobs are glued.

Glue white paper on to one side of each disc, so that the figures and station names can be written on clearly.

For the knobs, cut three little circles $\frac{3}{8}$ in. in diameter with a $\frac{1}{4}$ in. hole in the centre as shown at Fig. 6. Six little washers will also be required when these dials are fixed in.

Marking Out the Dials

Fig. 7 shows how the "hours" and the "minutes" dials are drawn out. It also gives an idea of how the writer's "station" dial is marked out. But yours will, of course, vary with the number of stations you are in the habit of listening to and their names.

If marked out with indian ink, these dials will show up quite clearly when viewed through their corresponding openings in the front of the "set" (see Fig. 2).

Assembling the Parts

Having cut out and glasspapered all parts and marked out the dials, we are ready to assemble the model. First glue or nail the sides to the bottom. Then get the spindles ready for assembling, by gluing one disc on to each, $\frac{3}{8}$ in. from one end. This is shown clearly at Fig. 8.

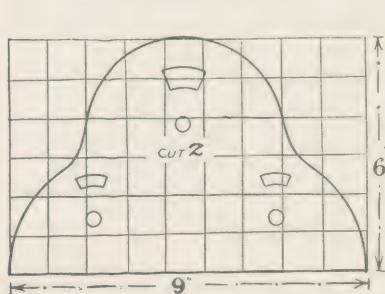


Fig. 2—The front marked out for cutting

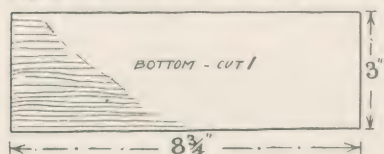


Fig. 3—The floor of the article

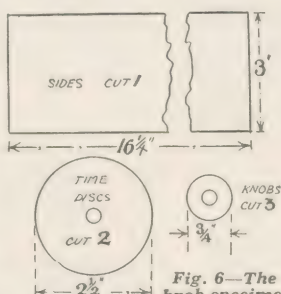


Fig. 4
The side piece

Fig. 5—The disc circles to be cut



Fig. 6—The knob specimen



Fig. 7—How the three dials are marked out

When the glue has set, fix these dials in by putting them in to their corresponding hole in the back of the model, slipping a washer on between disc and front, and another between front and knob, and then gluing on the knobs. Fig. 9 gives a side view of how each dial looks when fitted in.

Before the shaped sides can be added, the ten stay pieces must be fixed in. These will all be $\frac{1}{8}$ in. lower than the edge of the front and back, and be so arranged that one of their flat surfaces is presented, as far as possible, to the wood they are to hold.

Nail the side piece down at one edge, on to one of the bottom stays and carefully bend it round to the

shape of the sides a little at a time, Fig. 10. Take care not to bend it any more than is just necessary to get the next pair of nails into the next stay piece, or it may split.

Four little round toes complete the model with a stain and varnish, or french polish, finish.

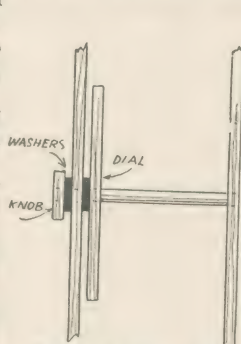


Fig. 9—A section of dialling details

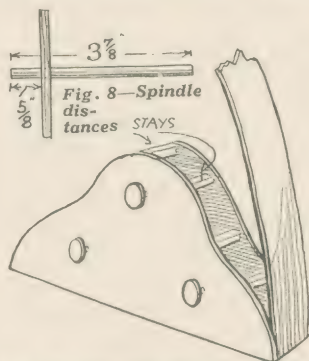
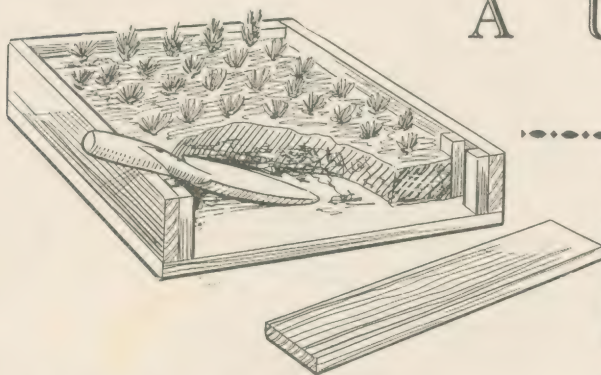


Fig. 10—The cover strip on the edge

CUTTING LIST

Pieces.	Description.	Length.	Width.	Thick.
2	Front and Back.	9ins.	6ins.	$\frac{1}{8}$ in.
1	Bottom.	8 $\frac{1}{2}$ ins.	3ins.	$\frac{1}{8}$ in.
1	Sides.	1ft. 4ins.	3ins.	$\frac{1}{8}$ in.
1	"Station" Disc.	3ins.	3 $\frac{1}{2}$ ins.	$\frac{1}{8}$ in.
2	"Time" Discs.	2ins.	2 $\frac{1}{2}$ ins.	$\frac{1}{8}$ in.
3	Knobs.	$\frac{1}{8}$ in.	$\frac{1}{8}$ in.	$\frac{1}{8}$ in.
3	Spindles.	3ins.	$\frac{1}{8}$ in. dowelling	$\frac{1}{8}$ in.
10	Stays.	3ins.	$\frac{1}{8}$ in.	$\frac{1}{8}$ in.



THE seed box indicated in the accompanying illustrations is most useful for raising young plants. The special feature being that one of the sides may be taken out at will as clearly shown. This is very useful when the time comes for bedding out the plants, since when the side has been removed, it is a simple matter to take each plant out with plenty of soil thus keeping the roots more intact.

The box is simple to make, and it is well worth while to make up half a dozen which are bound to come in handy.

Parts Required

What may be termed the fixed side of the box consists of a piece of wood 16ins. long by 2 $\frac{1}{2}$ ins. wide and $\frac{1}{2}$ in. thick. The removable side or front of the box is a piece of wood $\frac{1}{2}$ in. thick cut 14 $\frac{3}{4}$ ins. long by 2 $\frac{1}{2}$ ins. wide. Details of the

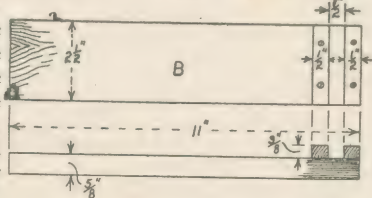


Fig. 1—Detail of the ends

A USEFUL SEED BOX

two ends of the box are indicated at Fig. 1.

First cut the pieces 11ins. long by 2 $\frac{1}{2}$ ins. wide by $\frac{1}{8}$ in. thick. Now four pieces of $\frac{1}{2}$ in. by $\frac{3}{8}$ in. stripwood are cut off 2 $\frac{1}{2}$ ins. long, and screwed on the front of the ends $\frac{1}{2}$ in. apart as clearly indicated. This forms a slot into which the front side of the box may be lifted out or placed in as required as shown clearly in Fig. 2.

The bottom of the box is made in wood $\frac{1}{2}$ in. thick, 16ins. long by 11 $\frac{1}{2}$ ins. wide. Drill three or four $\frac{3}{8}$ in. holes anywhere about for the purpose of drainage. These holes are covered with small pieces of broken flower pot before filling the box with a good leaf mould compost.

The parts of the box are fixed together with screws or nails, taking care to fix the two end pieces with the slots facing each other as clearly shown in the illustration.

CUTTING LIST

- 1 piece 16ins. long by 2 $\frac{1}{2}$ ins. wide by $\frac{1}{2}$ in. thick.
- 1 piece 14 $\frac{3}{4}$ ins. long by 2 $\frac{1}{2}$ ins. wide by $\frac{1}{2}$ in. thick.
- 2 pieces 11ins. long by 2 $\frac{1}{2}$ ins. wide by $\frac{1}{8}$ in. thick.
- 1 piece 16ins. long by 11 $\frac{1}{2}$ ins. wide by $\frac{1}{2}$ in. thick.
- 4 pieces of $\frac{1}{2}$ in. by $\frac{3}{8}$ in. stripwood 2 $\frac{1}{2}$ ins. long.

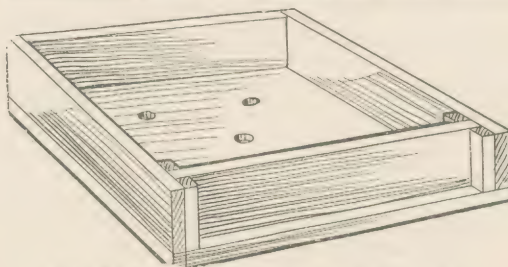


Fig. 2—The empty box showing drainage holes

TO PATENT AN INVENTION

PEOPLE, especially those of a mechanical turn of mind, get any number of good ideas for making useful gadgets, but it is a surprising fact that only about nine people out of ten know anything about the procedure necessary to patent their inventions. Most people think that it is a very expensive process, and shrink from the idea of spending a pound or two on something that may well be worth a fortune to them.

Some hundreds of applications are filed every week at the Patent Office, 25 Southampton Buildings, London, W.C.1, where ideas of all kinds are registered by the Comptroller-General of Patents, and protected from unscrupulous imitators.

Your Own Risk

In the first place, you must realise that a patent is taken out entirely at your own risk. After you have filed your descriptions, a search is made over a period of fifty years, and almost invariably a provisional patent is granted. Of course, anything of a frivolous nature, or anything illegal, like a machine for forging pound notes would be excluded.

The two methods open to you are these. Apply for a provisional patent, which, in not less than six months, must be followed by the complete specifications necessary to obtain the final patent, or if you have everything complete and ready, you may apply for the final patent without any preliminary application.

The former is the usual procedure, and has many advantages, because it gives you time to "chew over" your ideas afresh, and possibly make some improvements in your designs.

A Provisional Patent

For the Provisional Patent, you may obtain the necessary form by giving a few days' notice at any Post Office, or direct from the Inland Revenue Office, Royal Courts of Justice, The Strand, W.C.1.

This form will require a £1 stamp to render it valid, and it must bear your own name, making no mention of any trade or business name.

On this form you will require to describe briefly your patent in some apt title, setting forth the principal reason for its invention, such as "Improvement in the construction of a Carpet-Sweeper." In your specifications cut out all "fancy phrases." State your description in plain straightforward language, and you should *not* put your name on these descriptions.

Only one application for a patent can be made on a single form, but analagous or alternative descriptions may be made, if desired.

Submit these to the Patent Office, and as soon as they have been accepted, you are "protected" for six months, during which time you will be able to reflect on the soundness of your proposals or improve them at will.

After Six Months

At the end of the six months, your complete specifications must be lodged, informing the public of the precise nature of the monopoly desired, and giving a full description of how your invention will be worked. It must be made on a form to which you will have to affix a £3 stamp, and, of course, you can continue on foolscap sheets.

Here again, your descriptions must be worded in such a way that skilled persons can readily grasp your idea, and any claims you make as to its superiority over existing devices of the same nature, must be written in short paragraphs at the end of your description.

Drawings

Your drawings which accompany the specifications are very important. Make them in simple lines. Do not shade them, or decorate them for effect. They should be as simple as possible. Any lettering on them, which you may want to show—"A" and "B," etc.—should be not less than $\frac{1}{8}$ in. in size, and in fact any original diagrams made on the illustration sheets provided, should be clear and concise, not forgetting that they will have to be reduced when photographed. If you have lodged your diagrams with your provisional application, there will be no need to repeat them.

Thus completed, your specifications are received by the Patent Office, who will ascertain if any invention, *claiming* to accomplish the same object has been filed during the last fifty years.

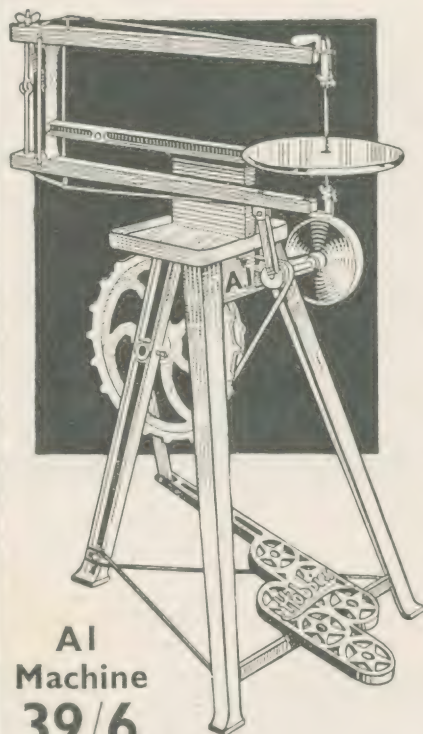
Settling the Patent

If a similar claim is found, you will be notified, and given two months in which to amend your ideas, or if you are persuaded that the former invention was a failure, you may persist in demanding a patent of your own. On the other hand, you may not think it worth while to proceed with the matter, and you will be £4 and a good deal of trouble out of pocket.

But when he is satisfied that you have fulfilled all you have claimed for your idea, the Comptroller accepts your patent, publishes it in the official journal, and affixes his seal to it, thus completing the business.

Your next step will be to interest a manufacturer in your idea, and as it will be patented, you have nothing to fear from "copy-cats" who may desire to steal it from you.

The Sale for YOU



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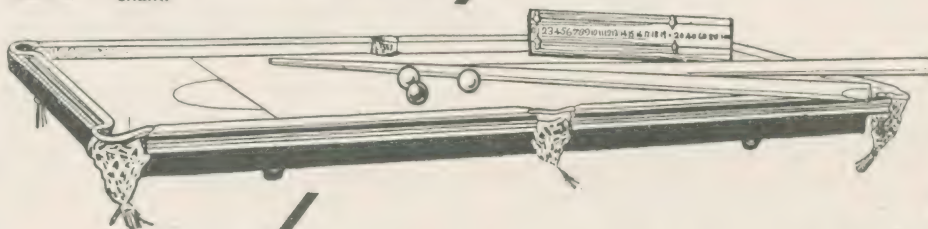
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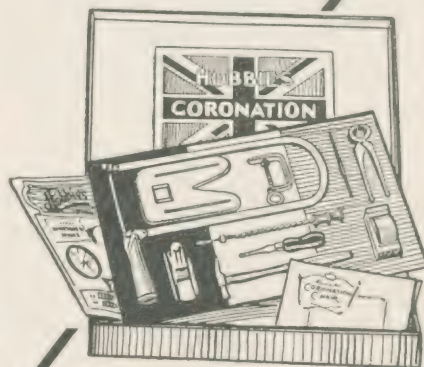
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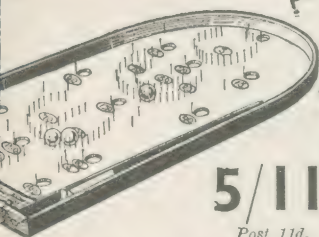
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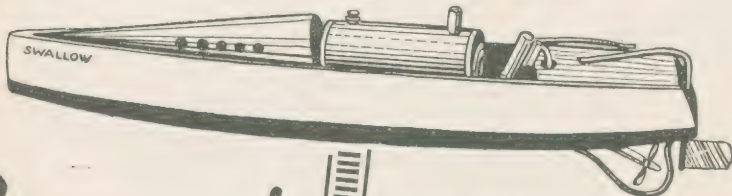
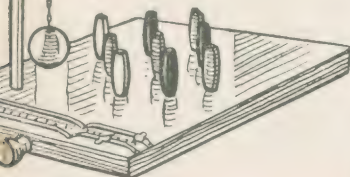


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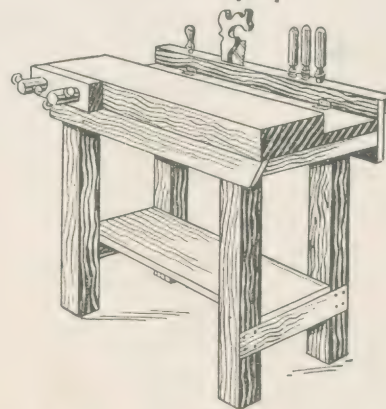
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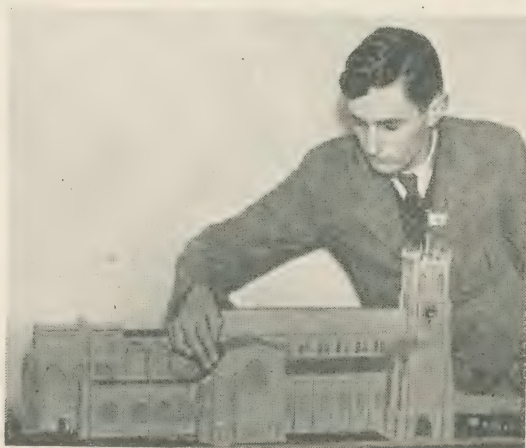
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READERS' SNAPS



[Photo by permission of Bournemouth Echo]

How many recognise it—because thousands must have seen it. It's a splendid model of Christchurch Priory the famous place to visit near Bournemouth. It comprises about 700 pieces of wood cut and constructed with fretwork tools by Kenneth J. Hutchings of St. Paul's Road, Bournemouth.



This proud possessor is W. J. Clarke of City Road, London, N.1, who has been an ardent fretworker for some time, and has also persuaded some of his workmates to become interested. He is, of course, an active member of the Hobbies League.

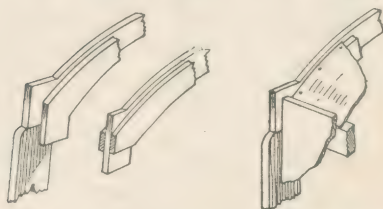


What a sight for the navy! A brilliant collection of old-time ship models made from our full size charts by R. Wisdon of Southsea, Hants. There are, in addition, a pair of Galleon Candlesticks, of which our friend has made and sold eleven pairs with orders for several more in hand!

Model Station—(Continued from page 602)

edge of this is chamfered inwards to the same angle as the arc of the roof support.

A detail of the back end of the station is given



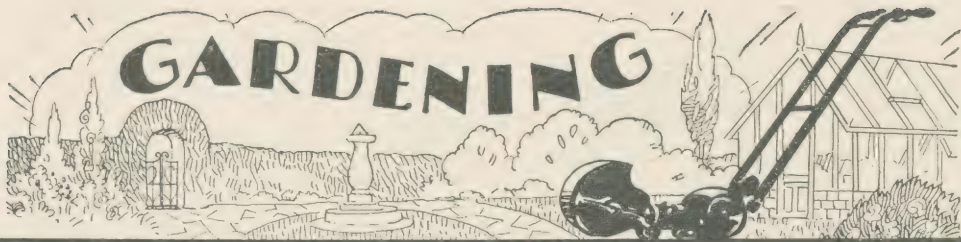
Figs. 4 and 5—Details how roof is fixed on to support strips and arches

at Fig. 5 in which this particular strip can be plainly seen with the rhodoid running off it.

The completed

model can be painted red and stone colour, or of course a stucco effect obtained by pasting on roughcast paper supplied by Hobbies, or even sanded glue, outlining the window frames nicely in bright colouring, add a clock to the tower, and put in any incidental additions you wish. No doubt many will like to add a booking office and wall posters, with interior clock, seats, barriers, etc., to make the model more realistic.

The platform edges should be covered with brick paper and a suitable white edge painted on. There is room for two lines of rails, and a good plan would be to put the whole model on to a single base so it can be stood in position without any further trouble.



MARCH is a busy month for the amateur gardener for there is a great deal needing attention in all departments. Weeds are growing quickly at this time and must be kept down. The best time to go over the ground with a hoe is when the biggest weeds are not more than a $\frac{1}{4}$ in. high.

By merely drawing the hoe over the soil surface at this time thousands and thousands of tiny weeds are destroyed, some of them too small to be seen. So the amount of work needed to keep the garden clean is reduced by more than half.

If the weeds are allowed to grow until many of them are 3 or 4 ins. high, they will have to be chopped out, and this takes a great deal of time and labour.

Sow in Drills

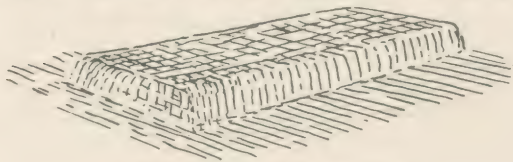
When sowing seed of any kind in the open it is better to sow in rows or drills than to sprinkle the seed broadcast over the seed bed. It is a good plan also to mark the positions of the rows with a peg at each end so weeds may be hoed before the young plants are through the ground.

Another good idea when sowing a slow-growing crop such as carrots is to mix a little radish seed with the carrot seed. The radish seed will germinate much more quickly than will the carrots, and will show the exact line of the rows. Also the young radishes will be ready for use before the carrots need the space.

In this way it is possible to grow two crops on the same piece of land at the same time.

Carrots

For carrots the land should be deeply dug so the tap roots are able to run downwards to a good depth. In this way a supply of nice shaped



Raised onion bed on heavy soil

carrots is ensured. It is better not to apply farmyard or stable manure for the carrot crop, but to grow these on land which was well manured last year.

Apart from two or three of the more tender vegetables such as marrows, dwarf beans and runners, sowings may be made in the open of most vegetables during this month. If there is a garden frame available or a cool greenhouse, the tenderer kinds may also be brought on.

Onions may be sown or "sets" (which are

small onion bulbs), may be planted. If it is not possible to get the land in good order for these, it is better to wait a little longer and to plant out young plants next month.

If the land is very heavy it is a good plan to make raised beds such as are used for asparagus growing, and to grow the onions here. If very light, clay should be added to the soil if any of this can be obtained.

The seed is sown in very shallow rows about

WORK FOR THE MONTH OF MARCH

rows apart and given only the slightest sprinkling of soil.

The wrinkled varieties of peas are most suitable for sowing this month. If tall varieties are chosen, allow enough space between the rows to grow a few lettuces as these will do well in the shade provided by the peas.

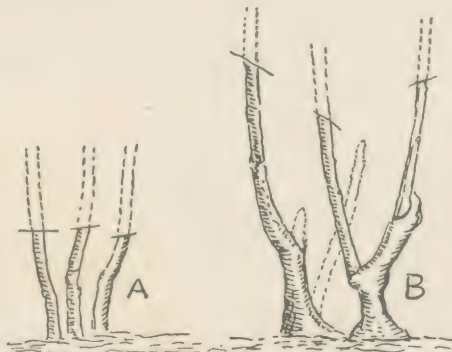
Potatoes

If the position is sheltered, main-crop potatoes may be planted, but in exposed places it is better to wait three or four weeks. It is a case of "more haste less speed" to get potatoes planted early only to find that a late frost nips them off just as they are growing well.

About the last week in the month will be early enough to make a sowing of turnips.

* * *

IN the flower garden it is not too late to plant roses, but this work ought to be finished as early as possible. Most roses are best pruned during this month. Newly planted roses needing particular care.



Point to prune newly planted rose bushes

Prune as above with established bushes

All newly planted bush roses (that is those planted in late autumn or this spring) should be cut down to within 3 or 4 ins. off the ground, standard roses should be cut back almost to the main stem and strong climbing kinds should be cut down to within 9 or 10 ins. off the ground.

When pruning roses that have been planted longer than this it is best first of all to cut away all dead and diseased shoots at their base.

For garden decoration do not shorten healthy shoots too severely and always cut at a point where there is a growing bud pointing away from the centre of the plant. If the roses are wanted for table decoration or for exhibition, the shoots should be shortened rather more severely.

Hardy Annuals

After the middle of the month hardy annuals may be sown in the open. Choose a sheltered sunny spot of land, and well dig it, if this was not done earlier, to reduce the surface soil to a fine mould or tilth.

The most common mistake is to sow the seed too thickly, which results in lanky weedy plants.

It is far better to sow very thinly indeed, and when the plants are of a size to be handled thin out carefully, making sure that two seedlings are not allowed to remain together.

Sweet Peas

Sweet peas may be sown at this time. If possible work into the ground well down beneath the surface some well rotted stable manure. Put the seed to soak in warm water the night before sowing.

1½ ins. deep is the depth to sow and the seed should be 3 ins. apart. It is a good idea to sprinkle a little old soot over the surface of the soil where the sweet peas have been sown.

Any gaps in the herbaceous border should be filled up as early as possible, and hardy perennials for other positions should be planted at once.

There is little to do in the fruit garden this month, except to finish any pruning as early as possible and keep the strawberry plot clear of weeds. If there is any manure to spare put this round the base of gooseberry and currant bushes.

A NOVEL HOME-MADE TELEPHONE

HERE is a good home-made telephone which will appeal to everyone especially those who have their workshops, say down at the bottom of the garden, or up at the top of the house, where it is difficult to hear the call to a meal.

All you need are two ordinary sugar boxes, two bladders which you can obtain from any butcher, sufficient copper wire to connect up the distance between the "call-office" and the "reception," and a little felt.

Two Boxes

The diagram will show you exactly how to fix up the two boxes. Cut a circular hole in the piece forming the top, with your fretsaw, and smooth the rough edge remaining.

Before using the bladders they should be well washed inside and out with warm water to which a little disinfectant, such as lysol, has been added. Then cut a little off the necks, and spread one of them right around the circular opening you have made in the box.

Fixing the Bladders

To keep it in position, it is necessary to tack it with very small tin-tacks, but as there is a likelihood of the substance splitting, it is advisable to make an edging out of an old felt hat, driving the tacks through the felt, before they enter the wood.

Your only other difficulty with the bladders is that they will shrink when they dry. To prevent this you should take a round disc of lead, about the size and thickness of a penny, punch two holes in it, and thread your wire through. Pass

the wire through the lowest part of the bladder, and fix the lead there also to act as a weight.

Now you will have to wait for a few days for the bladders to dry, after which the lead weight can be removed, and you will find that all creases have been removed.

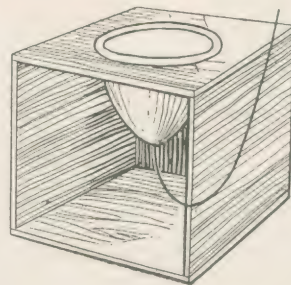
The Line

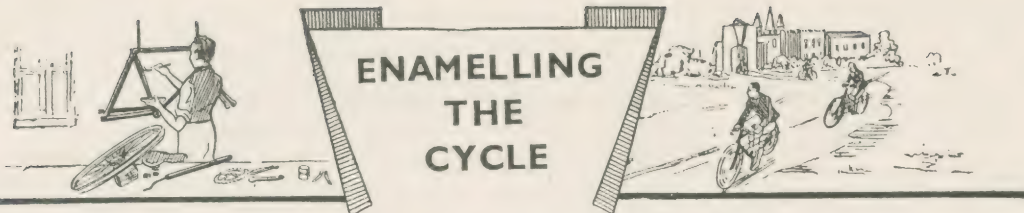
Treat both boxes in this way and place one in your workshop, and the other one in the room from which you desire the call to be made. Connect both points up with your length of copper wire, by joining the two ends to the wire perforating the bladders. If you can solder the joins you will find that the signals are even louder and in speaking into your telephone, it is only necessary to bend over the box and speak into the bladder.

Fixing the Wire

You may use your own ideas about fixing up your line of copper wire. If the whole thing is indoors, it may be tacked neatly to the wall, as is done with the wire connecting an outside aerial to a wireless set. Or if half of it is indoors and the other half outside, you may be able to erect little poles to carry the wire to the other end.

To make a nice job of it, you may paint or varnish stain your boxes, to any design you choose.





"KNOWING how" is half the battle in enamelling a bicycle successfully; the other half is plenty of care and patience. By successful enamelling is meant the production of a finish which is smooth and shiny. It is not possible to create a finish equal in every way to the one which enhances the appearance of a perfectly new machine, but the amateur (granted patience and care) should at least be able to make a tawdry bicycle look smart.

The first requirement, of course, is enamel and brushes, and here, at the outset, it is easy to go astray. Not only is it wise to avoid cheap enamels, but you must choose the right kind.

Two Methods

There are two varieties, which may be termed the slow-drying and the quick-drying. Of these, the quick-drying kind is better for home use. The sooner the coats dry, within reason, the better the result will be, for it is dust settling on the partly-dry surface which destroys the highly polished effect.

Modern quick-drying enamels are of the cellulose type, however, and not in every case will a cellulose enamel "take" on top of old enamel. Thus, even before you buy your outfit, you must decide whether you are to strip the old enamel or to apply the new coat over the old.

Take Away Roughness

If the present finish is in fairly good condition, a reasonably good effect can be achieved without a preliminary scraping operation. Smoothing the surface with fine glasspaper will eradicate any slight roughness or chipped places. But in this case it is necessary to make a test to ascertain whether cellulose will "take" on the old surface.

You will probably be able to bag a brushful of cellulose enamel from a friend for this test; if not, a 2d. tin can be bought.

Apply a little of this on an obscure part of the frame (say, under the saddle), and leave it for three hours. By that time it should be quite dry enough to be touched. If it is not, or if it has blistered, you will either have to use the old slow-drying kind of enamel or strip the machine.

Removing Old Enamel

Removing old enamel is not now the tedious task it was at one time. Solvents to soften the enamel are now obtainable. "Quicker-strip" and "Nameloff" are two effective brands, and a shilling tin of either will serve for more than one bicycle.

The solvent should be dabbed on, and after a short time it will be found that the enamel can be

scraped away easily with an old knife. The more thorough the scraping, the better the result of the new enamelling will be. After a general scraping with the knife, the surface should be polished with glasspaper—or, where rust is evident, with fine emery cloth.

Then, before starting to re-enamel, wipe the frame with a clean cloth dipped in petrol, to remove any traces of grease. Grease and specks of rust or old enamel are arch enemies of successful enamelling.

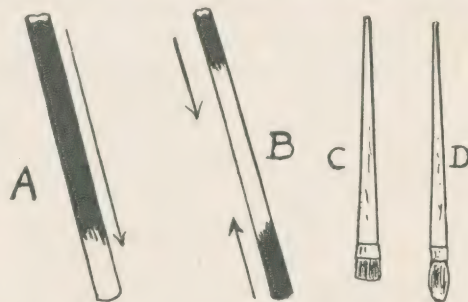
Suitable Brushes

In addition to the new enamel you will need a brush. See that it is a good one—there is nothing more aggravating than to find that hairs are being shed as the work proceeds. It should be of reasonable size, too, and should be flat at the end of the bristles, not round. A 1½ in. brush is about the most suitable size for cycle enamelling.

You can help matters further by running your fingers through the brush before dipping it in the enamel. This will remove any dust that might otherwise be transferred to the enamel. At the same time, it will enable you to notice any loose bristles. These, of course, should be removed.

Test Piece

It is wise also to prepare the brush by enamelling a piece of polished wood, before starting operations on the bicycle. In that way the bristles will be



The right way (A) and the wrong way (B) to enamel a frame with the right brush (C) and the wrong one (D)

softened and made ready for their real job. But see that the board is perfectly free from dust and grease.

You will be wise also if you test the enamel itself. It sometimes happens that the liquid thickens during storage, and if it does not flow freely it should be thinned slightly with a little "thinner." A preliminary trial in this way will also show just how full the brush needs to be kept for good work.

The old advice to "apply as thinly as possible"

is not now supported by experts; it is better to keep the brush fairly full and to work rather quickly. It is particularly advisable to work at a fair pace, and with a reasonably well-filled brush, if the enamel is cellulose and not the older kind.

Cellulose enamels dry quickly, and for this reason it is best to start enamelling the frame tubes at one end and continue to the other, rather than to do the job in two halves. The latter method means that fresh enamel will have to join partly dry enamel at the halfway line, and there is risk of a visible joining mark.

The point is not so important, however, if slow drying enamel is being used. If you do have to make a join, try to arrange matters so it comes at a spot where a flaw will not be noticed.

A joining mark on the mudguards, for instance, would not matter greatly, if it came close to the point where the mudguard passes through the forks.

A Second Coat

For a tip-top effect, a second coat of enamel should be applied, after the first has thoroughly dried. Above all, do not try to remedy flaws by applying further patches of enamel to the first coat. Such methods merely enlarge the defect.

Resist the temptation to patch up the work; wait until the coat is properly dry (leaving it overnight for preference). Then rub down the rough parts with the special glasspaper called "wet or dry," and finally give a second careful but rapid coat to the entire machine.

If you want a really good result, there are still further ideas you can adopt. The enamel can be polished; it can be given a coat of hard, transparent varnish; and you can apply liners or transfers as a finishing touch. Polishing is best done with a soft cloth and metal polish.

Transfers

Lining transfers can be obtained for a few pence at most cycle stores. They are applied to the cycle by first brushing transfer varnish thinly over them. The varnish is allowed to become tacky, and then the transfer is placed carefully in position on the bicycle. It must be left for at least an hour, and, finally, the paper backing is soaked until it is really sodden and can be peeled off.

If you wish to add a maker's transfer, you must send the cash for this to the manufacturers of the bicycle. You will have to give the frame number, and (if possible) the date when the machine was originally bought, also the dealer's name.

Trade Name Transfers

Few manufacturers will supply name transfers unless these details are given. Obviously, without these precautions it would be easy for unscrupulous persons to attach the transfer of a high-class make to an inferior machine, and then to pass off the bicycle as a high grade one.

Adding liners and name transfers will complete the operation of enamelling your cycle, and if the task has been tackled carefully and in the ways suggested, the result should satisfy the keenest critic.

SIMPLE SMALL PICTURE FRAME

ON page 620, are given patterns for a simple little picture frame, and the glass accommodation is just a small size such as you have taken in snaps last holiday time.

The whole thing is cut out from just a little piece of wood, and made to stand by means of a strut support at the back. The large design is pasted to either $\frac{1}{8}$ in. or $\frac{3}{16}$ in. wood, then the simple pattern of the acorn cut out.

In cutting away the centre square for the glass, bore a hole in one of the corners. Thus the piece cut out with the fretsaw can be replaced later behind the glass and a piece of brown paper stuck over it to keep it in place. This must be done before the picture has been put in. The glass is held in by four strips also cut from $\frac{1}{8}$ in. wood.

A Support

A support is provided for the frame by a hinged strut, and this must have a flat piece shown glued into the back of the frame.

The exact height is provided by the length of the support itself, and this can be either one of

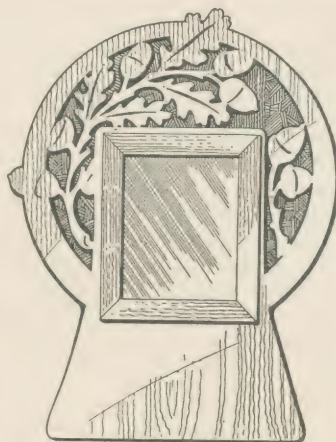
the wire struts supplied by Hobbies or a piece of wood tapering to the top. The wire struts are supplied with metal hinges ready for fitting on to the board provided, but

if a wooden support is used, the ordinary hinge or the special photo hinge can be utilised.

The back of the fretted portion can be made to stand up more by putting some suitable material behind it.

The coloured linen cloth in blue, green or red is supplied by Hobbies, and this is quite suitable, or you can apply smoothed out silver paper, or veneer paper, or even suitable linen material.

Glue it behind the whole of the fretted portion, then cut it round the outer edge level with the wood itself.





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Who had sixteen billy cans to put right
He said with a grin
"More badges I'll win,
"Be prepared—that's the motto—USE
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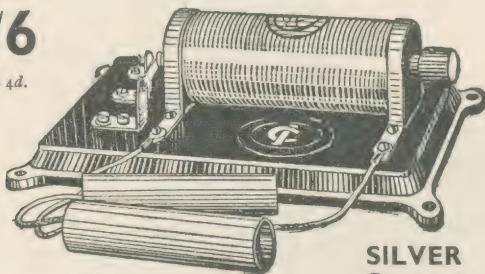
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the finer Oil Varnish Stain.
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tain a perfect finish with
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work has been smoothed
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For details on making this
SMALL PICTURE FRAME see page 618



The EDITOR'S NOTES



ALL those people who have written for a model Station will, I know, now be satisfied with this week's gift design. A large number of readers will also be equally delighted because it is a model sure to be popular. It will suit the most generally used size of model railway and will add more realism than the ordinary wayside station. Of course, it wants to be finished off nicely, and for this you cannot do better than use the brick and stucco wallpaper with enamel colours for the window frames, doors, etc. Take pains with this work, and you will have a splendid piece of work.

BY the way, some new readers may not know that I can supply a special display card which can be used when they exhibit any of their work. It is nicely printed, containing the words "Made from a Hobbies Design," and just large enough to stand against your show piece, without being too blatant. If you want one—and they are sure to come in useful, let me know and I will send one along.

NEXT week is to be our special enlarged Spring Number and as usual it is going to be a wonderful fourpennyworth. The Design Chart, for instance will be double the usual size, whilst smaller and simpler patterns will be printed in the book for a new novel "Cup Final" ball game, and an ingenious mechanical automatic Quick-Firing Gun. The articles, too, will be of particular interest and cover a wide range of pastimes.

IN response, too, to a large number of readers I am having details for building a real model flying aeroplane of proved design. It has been planned and built specially for Hobbies Weekly, and contains some unusual features of interest. Moreover there will be a special full size Blue Print available by means of which the parts can be easily and rapidly built up.

SO altogether next week's issue will be an outstanding one and I would impress

upon you to secure your copy early, or, better still, ask your newsagent to reserve your copy next Wednesday.

I AM glad to learn that the Edinburgh Hobbies Club is flourishing so well since I last mentioned it. There are already 130 working members and section leaders guide and help the fellows in the various sections taken up. Any Edinburgh reader can obtain further particulars from the clubrooms, 33, Lauriston Place.

TAUNTON'S School, Southampton, recently had a very fine display of articles in their hobbies exhibition. The models and work shown covered woodwork, metal work, air models, photography, painting, etc. and even included several puppet theatres made from our recent series. Altogether a very praiseworthy effort on the part of the scholars and those responsible for their guidance.

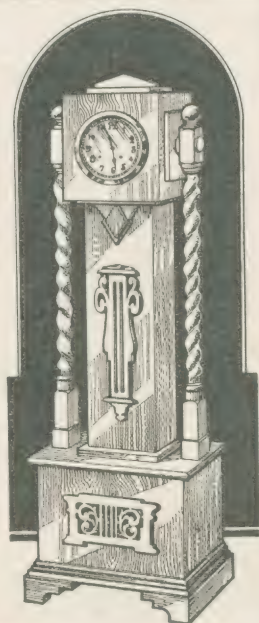
ANOTHER Exhibition was held recently in St. Helens and this, too, was a great success. There were 110 entries and the Judges, Mr. George and Mr. Thompson, remarked on the high standard attained. All Hobbies designs were used, and the winners were D. Entwistle, M. Lamb, R. Free and K. Jones in Class I and R. Taylor, A. Free, J. Brough and J. Yates in Class II.

There were also prizes in the girls' section and in a special open class for our designs. In the latter, Kenneth Yates came out First with the Coronation Coach, William Blake with the Elizabeth Jonas and G. Farrimond with a Scout Challenge Shield.

AN entirely new and quite novel type of competition is coming along next week with special prizes for smart readers. You will all enjoy solving the simple picture puzzles, I know, even apart from winning anything. The picture clues are interesting and intriguing. Our usual Crossword Puzzles will, of course, be continued as usual. **The Editor**

Design
for this
**HANDSOME
ELECTRIC
CLOCK**

Double
size
sheet
Free
next
week

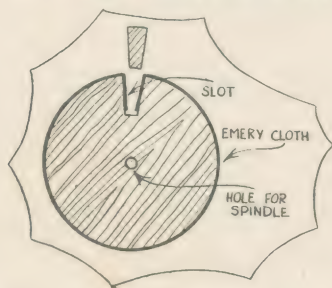




For original Tips published the sender will receive two dozen Fretsaw Blades. We cannot acknowledge all those received, or guarantee to print them. Send to The Editor, Hobbies Weekly, Dereham, Norfolk. Keep them short and add rough pencil sketches if possible.

An Emery Wheel

THE following little idea may be useful to those whose emery wheel has worn out, and who cannot immediately procure another. All that is needed is a



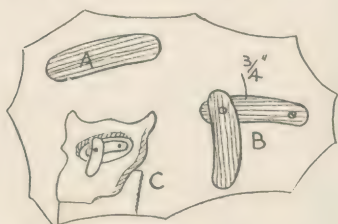
disc of wood and some emery cloth. The cloth is stretched around the circumference of the disc and the small block which was cut from the disc is inserted. Then it is ready to fix to the spindle and the accompanying diagrams may help.—(L.L.)

A File Holder

IF you have an old date stamp (e.g., one for printing PAID on bills, etc.) do not throw the handle away. It will hold a file for when you are sharpening saws, or a small fretwork file if driven in carefully.—(P. E.)

A Saw Holder

TO hold your saws in their place all you have to do is to get two pieces of wood about 2ins. by 4ins., one $\frac{3}{4}$ in. and the other $\frac{1}{4}$ in. thick. Then cut them



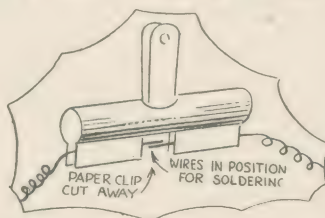
as shown in the sketch at A. Now take two flat-head screws and put them where shown in sketch B. Now screw them on the side of your bench so when the saw is in it looks as in C.—(M.D.)

Home-made Beam Compass

AT my work I happened to lose my beam compasses, but glancing round, discovered a strip of 3/16in. plywood. I sawed this till it was $\frac{3}{4}$ in. wide, then at one end cut out a notch and at the other end I drilled a hole. To use this device knock a nail lightly into the work at the desired centre, place the pencil point into the notch and move the lath round as needed.—(R. B.)

A Soldering Clamp

THIS clamp is very useful for small soldering jobs. To make it, take a paper clip similar to the type shown, cut away the two



jaws in the centre with a hacksaw and file the edges flat and smooth. Small parts to be soldered, or two wires can be quickly clamped in position with this simple clamp.—(M. C. McG.)

Depth Gauge

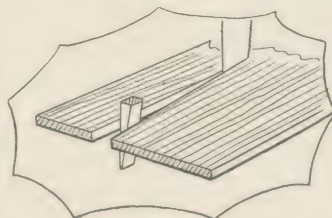
IT is often desirable to bore a number of holes with a brace and bit all the same depth, and is a help to have a gauge which will ensure this. One method is to count the number of turns made by the brace, making all alike. Another is to stick a piece of paper at the required distance from the end.—(E.D.)

Deleting Dents

DO not think you have ruined a piece of wood if you have made a dent in it. Just put a few drops of boiling water over the dent and leave for a few seconds, then dry and sandpaper the wood. The dent will have vanished.—(V.P.)

Sawing a Board

WHEN ripping a long board, place a piece of wood or chisel in sawcut (as in sketch).



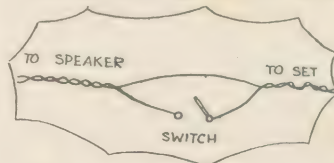
As you saw, move the wedge further down the cut. This eases the saw and allows it to run quite freely.—(F.D.)

Damp Bricks and Lino

A FEW days ago I had occasion to lay some lino on a kitchen floor, but owing to the bricks being very damp it was not long before the lino had become damaged. I laid some cheap roofing felt between the lino and bricks, and the lino is now quite dry.—(H. W. S.)

Loudspeaker Mike

AN ordinary loudspeaker can be used as a mike in the following way. Hang the speaker in a room other than where the wireless is. Run one lead from it to a radiogram terminal in your wireless, and the other lead run to a switch as illustrated. From the switch run a wire to the other radiogram terminal. Break the switch, turn on the radio and find a station. Then go to your mike,



and when you want to interrupt the programme make the switch connection and speak yourself. Your voice will come from the wireless set. Then switch off and the ordinary programme continues. A great deal of fun can be had by back-answering announcers.—(V.G.N.)

STAMP COLLECTOR'S CORNER

NEW ISSUES AND NOTES

THIS month there is more material than usual by a very great amount, so that it will be necessary to take up more than one page and to illustrate more than four specimens.

The Falkland Islands have issued another very beautiful and interesting set of twelve stamps values from $\frac{1}{2}$ d. to £1. Each has a separate design and most of them are sufficiently interesting to merit some short description.

The halfpenny value shows a picture of whale's jaw-bones. It is hardly surprising that at least

the name "Discovery" has been given to many notable ships. For example, William Baffin used this name for his boat which made six voyages to Arctic regions from 1602 to 1616.

Then another went to Hudson's Bay in 1719. Captain Cook on his third voyage was in command of another. Vancouver discovered the island named after him whilst navigating a boat similarly named. Captain Stephensen commanded a "Discovery" during the Franklin Relief Expedition in 1875. Captain R. F. Scott went to the Antarctic in 1901-1904 in another

the highest point (which is Mount Adam), this is not very lofty—being some 2,300ft. or nearly as high as Plynlymmon in Wales.

The 2/6 shows penguins, which we have mentioned before, whilst the five shilling has sea-lions. The antarctic variety is not quite so large as those found north of the Equator.

The ten shilling shows Deception Island, which is one of the South Shetlands. It is only free from ice for about five months of the year and only during that time is it inhabited because the land station arrives and departs with the whaling fleet.

The highest value (the one pound) has the coat of arms. One reason why this set has been described in full is because the stamps of the Falkland Islands are popular.

The last set of twelve issued in 1933—the centenary set with a face value of £2 is now fetching as much as £16. While it is admitted that the 1933 set did not have a very long life the fact that the Falkland Islands are remote and also that the number of inhabitants is small means that the stamps are not too easy to get, especially in the used condition. One could not buy the used 1933 set for the price quoted, it must be noted.

The third illustration is of another stamp which may be expected to rise in value very



Whale Jaw-bones

one of the stamps should have a reference to these mammals, because the whaling industry carried out from these dependencies is greater than that of the rest of the world combined.

In 1935 no less than 1,785 whales were caught and the value of the oil was nearly half a million sterling.

The penny value shows the black-necked swan which was discovered by the navigator Narborough, in 1670 in the Straits of Magellan. There is a bright red knob at the base of the beak and this, together with the black neck, makes a fine contrast with the white body.

The twopenny value shows the Battle Memorial erected at Port Stanley in commemoration of the victory of Admiral Sturdee over the German squadron under Von Spee.

The twopenny halfpenny ($2\frac{1}{2}$ d.) shows a flock of sheep which is the main industry on land; wool, tallow, hides and sheepskins being the chief exports. The sixpenny value shows the R.R.A. Discovery II.

One cannot really reconcile the number II to this stamp, because

The Upland Goose

and very probably some reader may know of yet another example.

The ninepenny value shows another boat—the R.R.S. William Scoresby. William Scoresby was a British Explorer, born near Whitby, known particularly for his accurate chart of the east coast of Greenland.

The fourpenny shows a picture of an Upland Goose, evidently



The Royal Wedding in Egypt

this is the female. Curiously enough, the male and female of this species of goose are very different. The male is almost entirely white, while the female is more soberly clad, being chestnut and greyish brown with flanks barred with black.

The one shilling shows Mount Sugar Top, although this is not

A Grecian Wedding

quickly. It was issued to commemorate the wedding of King Farouk to Miss Farida Zulficar, the daughter of the Vice President of the Egyptian High Court.

Notice that the date of the marriage is given in French on the left while the Arabic inscription on the right is also the date.

If any reader who sees these

notes can do so, will he please confirm or correct the point that on either side of the King and Queen are their respective signatures?

Apparently these stamps were all sold very shortly after they were offered,



Austrian Greetings

Wedding stamp to chronicle this week. This is from

and as (according to Messrs. Whitfield King & Co.) only 200,000 copies were issued, you will understand why they may be expected to rise in value.

We have another Royal illustrate and

Greece and the stamp shows the portraits of Prince Paul and Princess Frederika who were married on Sunday, January 9th. Only the stamp shown came out in time for the ceremony, two more to complete the set are due—the 1 and the 8 drachme.

Austria has issued two very attractive "Greetings" stamps, which came out for Christmas greetings, of course. They are both of the same design, the 12 groschen being green and the 24 groschen carmine.

On either side of a vase of roses will be seen the signs of the Zodiac.

By the way, how many readers know what is meant by the word "Zodiac." Suppose we say what it is now so that all may understand.

It is an imaginary belt or zone in the heavens extending on either side of the ecliptic, and it is within this zone that the motions of the sun, moon and principal planets take place.

A full explanation of the Zodiac would fill much more space than is at our disposal, but it is divided into twelve equal parts each of 30° called signs. Each sign is given a name and looking at the stamp we have reading top to bottom on the left, then top to bottom on the right. The signs are Scorpio the Scorpion; Sagittarius the Archer; Capricornus, the Sea Goat; Aquarius the Water Beaver; Pisces the Fishes; Aries the Ram. Then on the other side Taurus the Bull; Gemini the Twins; Cancer the Crab; Leo the Lion; Virgo the Virgin and Libra the Balance.

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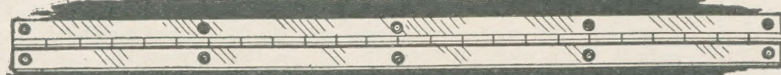
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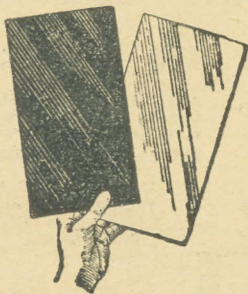
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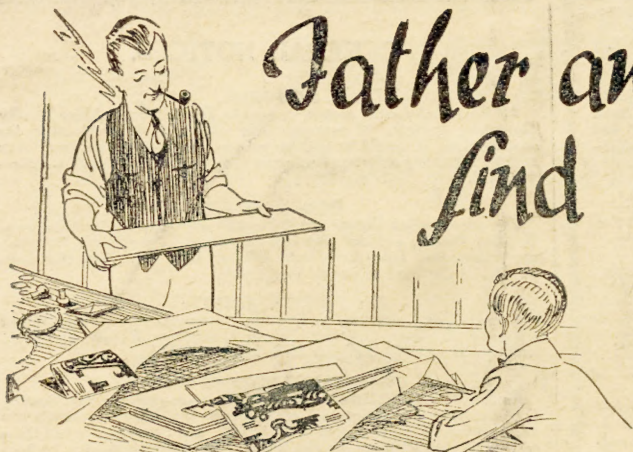
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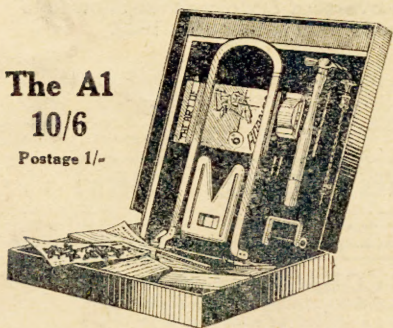
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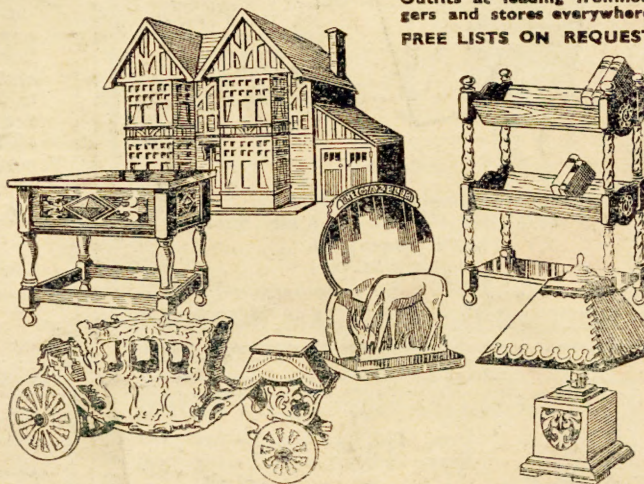


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